AVSIM Commercial FS9/FSX Aircraft Review

Yak-52

Product Information		
Publishers: AlphaSim		
Description: Piston powered single-engine Soviet military primary trainer.		
Download Size: FS9 - 40 MB / FSX - 45 MB	**Format:** Download	**Simulation Type:** FS9 / FSX
Reviewed by: Eduardo Ocampo AVSIM Staff Reviewer - December 12, 2009		

Introduction

AlphaSim, a software company based in the UK, is widely known by their vast military aircraft and helicopter selections. They decided to make something that is uncommon for MSFS: A Soviet era piston engine military trainer, the Yakovlev

Yak-52. This would be the eastern counter-part of the Beechcraft Mentor.

Yakovlev is a traditional Russian aircraft manufacturer. They started operations under this name back in 1934. Under supervision of Alexander Sergeevich Yakovlev dozens of (mostly) military aircraft, both fixed-wing and rotating-wing, were designed, built and tested; some failed and some succeeded as with any other manufacturer.

One of the handful of aerobatic trainers built by Yakovlev, the Yak-52 was designed as a primary trainer for the future DOSAAF (the Soviet voluntary army/air force/navy corps) troops. Once its training mission was over after the fall of the Soviet Union, it has become a sports aircraft for some civilian pilots that enjoy the rush of aerobatic flight. Some variants were introduced as time passed by; the Yak-52TD (Tail-Dragger) arranged with a conventional type landing gear; the Yak-52W, with an engine that drives a three-blade propeller instead of the two-blade one originally installed and the Yak-52TW, also a tail-dragger but with a more powerful engine.

The Yak-52 is a very light but powerful aircraft, which makes it responsive and fast; that makes aerobatics a perfect mission for it. This airplane is powered by a Vedeneyev M14P; a Russian radial engine which in my opinion is the most beautiful form a piston engine can take. By the way, the engine is massive: 10.2 liters of displacement; that's like 5 or 6 times the displacement your average street car engine has. It has 9 cylinders that produce a total of 360HP. To put this in perspective, the Piper Cherokee Archer weights a couple of hundred pounds less than the Yak-52 (around 2.200lb Empty weight), but the Yak has an engine twice as powerful as the one on the Archer: The Cherokee's Lycoming output is 180HP. Let's do the math: Similar weights + twice the power = Twice as fun!

Yet even more fun; the Yak-52 has inverted oil and fuel systems, that means you can do stuff you couldn't do in the Beechcraft Mentor. The inverted oil and fuel systems can give you a maximum of 2 minutes inverted; that is if your shoulders can take 2 minutes holding your entire body (which is not as fun as it sounds).

Some of the real aircraft specifications to educate yourself a bit:
A "tobacco" (that's the airframe without the wings) 25ft 5in long sits a crew of two in a tandem configuration. The wingspan of 30ft 6in can take the aircraft up to 4000 meters; that is 13.123ft for those who use imperial units. The powerful Soviet engine can speed this excellent single-engine up to 419km/h (226 knots), make it climb as fast as 7 meters per second (1400ft per minute) and cruise at some quite smooth 237Km/h (128 knots).

The aircraft is now denominated as "Bacau Yak-52" or "Aerostar Yak-52" since Aerostar, a Romanian manufacturer based in the city of (you guessed it) Bacau, was granted with building rights by agreement with Yakovlev back in the Soviet Union days.

AlphaSim designed this aircraft to make it as accurate as possible and they want you to feel like you are flying the real Yak. Let's see what they've got for us. Shall we?

Installation and Documentation

This aircraft's installation is done in a way an average simmer wouldn't have any problems with. The file comes in Zip format, downloaded from the AlphaSim website, after providing purchase details. Just download, unzip into the simulator's main folder and that's it.

A big no-no for this aircraft in my opinion is the lack of any decent documentation at all. All this aircraft comes with as far as documentation goes is a very short readme file and a (very!) small checklist accessible from the simulator's electronic kneeboard. The

readme file sheds a light on the key combinations for the model's animations and the pop-up panels. It also says where the lights and GPS switches are and how to move to the rear cockpit and…that's it!

That's all the documentation available for a Russian aircraft simulation that was intended to be used by non-Russian speakers as well. I contacted AlphaSim about this and their explanation for the lack of documentation was that they think that the readme file and the checklist are enough and that "there is no obligation to provide a user manual" since "the default sim aircraft do not have these." But still, I think they could have done a better job giving us some reading material for a proper understanding and operation of the aircraft since this surely is not a default aircraft.

Test System

AMD Athlon 7750 Dual-Core Processor 2.71GHz
4GB RAM
Genius Joystick

Flying Time:
13 hours

The Visual Model

…And that's one point for AlphaSim design team!

"You got to love Soviet designs"

The visual aspect of the aircraft is remarkable. The animations included in this package such as gear and flaps (which are all pneumatic!), flight controls, feathering propeller, front and rear canopies, cowl flaps both below the aircraft fuselage and behind the propeller, are smooth and realistic. Bonus points for the properly simulated gear struts and shock dampers. Standing behind the aircraft will also reveal the gap between the engine cowling and the nose section of the fuselage, just as in the real Yak-52.

Version 1 of this product only had two liveries available, but on V1.1 (the version tested for this review), AlphaSim released three more, making a total of five liveries available. The textures are great in definition and detail, and they sport some interesting "Soviet-ish" designs. Depending on the selected livery, the aircraft is configured for solo or tandem flight.

Interestingly, the pilots move their heads in reaction to yoke movements, simulating the acting G-forces. Pulling the yoke up will make the pilot(s) move his/their head(s) downwards; pushing down will have an opposite reaction and moving left/right will make the pilot(s) look left/right respectively. This is a great thing to watch from the outside while doing acrobatic maneuvers.

"You can fly this aircraft with the canopy closed..."

"...open..."

"...or you can fly it with some company!"

Cockpit and aircraft systems

Well…there isn't any 2D panel; so that leaves us only with the virtual cockpit. It looks pretty neat, following the trend set by the exterior model. The gauges are nicely done and animated, easy to see and read. However, given the difference in the way the systems work between the Yak-52 and the airplanes we are used to flying in the West, it gets confusing at times and I couldn't tell if some actions were part of an accurate simulation or if it was in fact, a lack of systems knowledge by the developer. The pneumatic system in this aircraft is a big one; flaps, gear and engine starting are some of the functions dependent on this system. For instance, I managed to start the engine with the battery off. Is the pneumatic system initially dependent on electrics? Not having a manual disabled me to judge the realism of the simulation as far as aircraft systems goes.

A "pro" for this cockpit besides its looks, is the fact that the basic controls are labeled in English. Most of those that aren't labeled, like the flight instruments for example, have English tool-tips. But even so, there's a gauge on the left with no labels and no tool-tips; it seems to be an engine parameter but then again, no documentation. Mind-boggling.

Another "pro" for the panel is that it is easy on computer resources; flying around in the VC doesn't seem to show a hard impact on performance. The night lighting is superb; just what you'd expect from a Soviet airplane.

"The cockpit at day..."

"...and night"

I also found some other results that draw question marks in my mind:
- I actually managed to takeoff with a feathered propeller with not too much noticeable (!) difference in acceleration.
- While it has both an ignition master switch and ignition button, only the button works; the switch doesn't, the tool-tip shows it as always on and clicking it shows no response either; I had to stop for a second and think "how do I start the engine?" since the button has a black guard and has no labels near it. To add to the confusion, no documentation to refer to…
- Even though the aircraft is equipped with a VHF NAV receiver, I couldn't receive any signals from the navaids. No ADF installed, by the way.

"Is it this one..?"

"...or this one?"

The rear cockpit is simulated. This means you can do your flights from the rear if you ever feel like it. Pretty much the same cockpit as the one in the front, except for the annunciator panel, which has 2 more rows of annunciators than the one installed on the front, no VHF NAV receiver and no side consoles, where the GPS and some lights switches are.

Word of advice: Watch the accelerometer! The annunciator panel has a “G-Load Limit” warning, but it only works for positive acceleration i.e. Pull-ups. Exceeding the negative G limit (pitching down too fast) will show no warning and if you have damages activated by stressed airframe on the Flight Simulator you’re in for a nasty surprise!

"The rear cockpit"

Sound

One of the things I love about this product is it’s sound; TSS sound set ladies and gentleman, you can’t do better than that. Old reciprocating engines (as most aviation engines) have each a unique sound and TSS has made a terrific job recreating it for the Yak-52. From the pneumatic system operating the flaps and gear to the engine at full power, this is a sound set you will love if you like this type of airplane.

The transition from idle to full power is smooth and glitch-less; you can enjoy it even more if you advance the throttle control smoothly, don’t just hit F4! The sound of the engine will relax you once you set cruise power; it purrs softly, you’re going to love it!

One thing I was expecting though was that once the canopy was open the sound of the engine would be louder and have a different pitch; after all you can fly this aircraft with the canopy open! But the sound remained the same…a bit disappointing I’d say. Besides this, the sounds on this aircraft will add something nice to the Yak-52 experience; for some it’s just noise, for some others (like me) it’s music to our ears.

Flying the Yak-52

Overall, the flying experience with the AlphaSim’s Yak-52 is very nice and entertaining; the flight controls are just amazing and represent the agility of the real world Yak-52 that can roll 180º per second! You will need to use your trim to make leveled flights; otherwise you’ll have to be very careful and precise with your yoke movements. The engine was designed to make the aircraft climb very steeply and to have a good vertical capability and may I say, this definitely is a

faithful recreation of the Yak on those aspects.

This aircraft is a military primary trainer and is also used in many air shows and competitions, so if you are a fan of aerobatic flight, this aircraft will become one of your favourites because of its handling characteristics. A suggestion to the people who want to buy this aircraft is that a group of friends can purchase this product and fly together in multiplayer sessions in the Flight Simulator, that way you can all do formation flights. I can assure you that's hours and hours of entertainment.

"Not quite a "parking" brake..."

However, there are a couple of things that draw some more question marks in my mind. While I was preparing for a test flight, I wanted to do an engine run-up like you would do on any single-engine piston aircraft. "Parking brakes: set; engine parameters: normal; throttle: advance…Are we moving?" Much to my surprise, we were.

The aircraft started to speed up quite rapidly, you can actually manage to takeoff with the parking brakes on; the answer I got from AlphaSim regarding this issue was that the braking was not properly simulated in the Flight Simulator itself (they got a point there) and they didn't want the aircraft to "nose-over" at low speeds, so they decided they were not going to put in a "stronger" braking force. In my opinion, I'd like better with an efficient parking brake.

Yet another unrealistic performance surprise by the aircraft came across when I was close to the "assumed" rotation speed and suddenly the aircraft pitched down and starts to "fly" with the nose gear still on the runway; this happens with flaps up or down, although with flaps down the effect is more noticeable.

"Err, is that supposed to happen?"

"Question marks..."

Once I took off and climbed a bit, I decided to invert the aircraft to test the 2 minute max while inverted "rule". I inverted the airplane and switched to the exterior view; imagine my surprise when I realized I had forgot to raise the flaps, yet there it was: the airplane flying inverted and leveled. You could even trim it and fly hands-off, flaps down and inverted with no effort at all. Question marks in my brain…

While in the landing configuration the aircraft becomes a bit unstable; the solution for this is, like in a real aircraft, the rudder pedals! You will need to use some rudder inputs to have a good rudder-aileron coordination to avoid slipping across the final leg. It may take a couple of short flights for you to acquire the proper technique, but once you get the hang of it you will definitely enjoy flying this airplane and the "greasers" will be piece of cake. You better learn and practice the "Stabilized Approach" concept.

And on other related news…

Some of the issues I have discussed here, like the feathered propeller problem and the apparent link of the lights to a "hot battery bus" (that's when something is connected directly to the battery and that will run whether the switch itself is on or off), can be corrected by some tweaking of the CFG file, as per AlphaSim instructions, just in case you want a bit more of realism from your Yak-52.

AlphaSim plans to release an expansion pack soon that will include the three-blade propeller and the tail-dragger

versions of the Yak-52. It will not be free but will be relatively low-priced, as said by AlphaSim itself. These new versions of the Yak-52 will also include new paint jobs as well.

A couple of images of the Yak-52's to come in the expansion pack courtesy of Phil from AlphaSim. The textures are "placeholders".

"Yak-52W"

"Yak-52TD"

Summing up

Overall, I think this aircraft is great to have if you're looking for a good time flying aerobatic maneuvers and in formation with some friends and is a great training platform for said activities. Once you take a look at the cockpit and familiarize yourself with the controls and indications, you can expect some amusement from this aircraft if you are into the type of flights performed at air shows or executing military maneuvers.

However, if you want to get some information on the real aircraft, you will have to look somewhere else since the product doesn't bring any documents to learn about the aircraft. This package has some very strong "pros" and some "cons" as well, which AlphaSim may address on further releases.

What I Like About AlphaSim's Yak-52

- The visuals, both in and out of the aircraft
- The sound; TSS-equipped!
- The maneuverability
- Beautiful liveries
- The aircraft itself: A Soviet piston-powered airplane; it certainly is not the Boeing 737!

What I Don't Like About AlphaSim's Yak-52

- No documentation!
- The lack of realism in some aspects
- Some tweaking in the CFG file needed to make the airplane a tad more realistic

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AlphaSim Yak-52

(adobe acrobat required)

Comments?

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